

113.1 - Cements and Related materials (powder form)

These portland (1880b, 1881a, 1884b, 1885a, 1886a, 1887a, 1888a, and 1889a) and calcium aluminate (1882a and 1883a) cement SRMs are for x-ray spectroscopic and chemical analysis of cements and related materials. Each unit of 1886a consists of three sealed vials. Each unit of 1880b, 1881a, 1882a, 1883a, 1884a, 1885a, 1886a, 1887a, and 1889a consists of four vials. [Also [Table 301.2](#) Cement Turbidimetry and Fineness and [Table 113.2](#) Portland Cement Clinkers.] SRM 2696 Silica Fume is a cement additive. Each unit of SRM 2696 consists of one bottle.

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SRM	Description	Unit Size	Component (mass fraction, in %)														
			CaO	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	SO ₃	MgO	K ₂ O	TiO ₂	Na ₂ O	SrO	P ₂ O ₅	Mn ₂ O ₃	F	ZnO	Cr ₂ O ₃
634a	Portland Cement	100 g	65.07	20.493	5.015	3.362	2.780	1.0057	0.3572	0.2463	0.0842	0.0735	0.1767	0.0229	0.0222	0.0114	
1880b	Portland Cement	4 vials x 5 g	64.16	20.42	5.183	3.681	2.710	1.176	0.646	0.236	0.0914	0.0272	0.2443	0.1981	0.0539	0.01054	0.01927
1881a	Portland Cement	4x5 g	57.58	22.26	7.060	3.09	3.366	2.981	1.228	0.3663	0.199	0.036	0.1459	0.1042	(0.09)	0.0489	0.0588
1882a	Calcium Aluminate Cement	4x5 g	39.29	4.01	39.14	14.67		0.51	0.051	1.786	0.021	0.024	0.070	0.060		0.004	0.113
1883a	Calcium Aluminate Cement	4x5 g	29.52	0.24	70.04	0.078		0.19	0.014	0.020	0.30	0.019	(0.003)?	(0.003)?		0.006?	
1884b	Portland Cement	5 vials x 4.5 g	61.31	19.30	4.851	2.937	4.034	4.74	0.957	0.2651	0.278	0.0258	0.0965	0.0750	0.0394	0.0042	0.00791
1885a	Portland Cement	4 x 5 g	62.39	20.909 ?	4.026 ?	1.929?	2.830	4.033	0.206	0.195	1.068	0.638	0.1220	0.0478 ?	(0.13)	0.0029	0.0195 ?
1886a	Portland Cement (White Portland Cement with Low Iron)	4 x 5 g	67.87	22.38 ?	3.875 ?	0.152 ?	2.086 ?	1.932	0.093 ?	0.084 ?	0.021 ?	0.018 ?	0.022 ?	0.0073 ?	(0.02) ?	(0.001) ?	0.0024 ?
1887a	Portland Cement	4 x 5 g	60.90	18.637 ?	6.202 ?	2.861 ?	4.622 ?	2.835 ?	1.100 ?	0.2658 ?	0.4778 ?	0.322 ?	0.306 ?	0.1186 ?	(0.09) ?	0.0667 ?	0.009 ?
1888a	Portland Cement	4 x 5 g	63.23	21.22 ?	4.265 ?	3.076 ?	2.131 ?	2.982 ?	0.526 ?	0.263 ?	0.1066 ?	0.082 ?	0.080 ?	0.1256 ?	(0.11) ?	0.107 ?	0.0186 ?
1889a	Portland Cement (Blended with Limestone)	4 x 5 g	65.34	20.66 ?	3.89 ?	1.937 ?	2.69 ?	0.814 ?	0.605 ?	0.227 ?	0.195 ?	0.042 ?	0.110 ?	0.2588 ?	(0.05) ?	0.0048 ?	0.0072 ?
2696	Silica Fume	70 g	0.486	95.61?	0.2080?	0.055?		0.235?	0.655?		0.129?		0.0863?	0.0299?		0.051?	

Values in parentheses are given for information only.
* Loss on Ignition at 750°C

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SRM	Description	Unit Size	Cl	Component (mass fraction, in %)							
				Loss on Ignition at 950 °C	Total	Sulfide	Insoluble	Free CaO	LOI 45 °C	LOI 220 °C to 550 °C	LOI 220 °C to 950 °C
						Sulfur	Residue		to °C to 550 °C	to °C to 950 °C	
634a	Portland Cement	100 g		1.66							
1880b	Portland Cement	4 vials x 5 g	0.01830	1.666	(100.49)	(0.0131)	(0.487)	(1.567)			
1881a	Portland Cement	4x5 g	0.013	(1.59)	(100.18)	(0.035)	(5.2)	(0.29)			
1882a	Calcium Aluminate Cement	4x5 g		(0.20)	(99.95)						
1883a	Calcium Aluminate Cement	4x5 g		(0.35)	(100.78)?						
1884b	Portland Cement	5 vials x 4.5 g	0.0065	(1.448)	(100.54)	0.0072	0.159	0.418	0.590	0.261	0.597
1885a	Portland Cement	4 x 5 g	0.0040	(1.68) ?	(100.18) ?		(0.22)	(2.05)			
1886a	Portland Cement (White Portland Cement with Low Iron)	4 x 5 g	0.0042 ?	(1.56) ?	(100.12) ?		(0.23)	(2.16)			
1887a	Portland Cement	4 x 5 g	0.0104 ?	(1.43) ?	(100.21) ?		(0.13)	(0.53)			
1888a	Portland Cement	4 x 5 g	0.0036 ?	(1.75) ?	(100.03) ?		(0.37)	(0.79)			
1889a	Portland Cement (Blended with Limestone)	4 x 5 g	0.0019 ?	(3.28) ?	(100.09)* ?		(0.66)	(0.58)			
2696	Silica Fume	70 g		2.11*							

Values in parentheses are given for information only.
* Loss on Ignition at 750°C